REMARKS

Claims 20-25, 66-70 and 72-76 presently appear in this case. Claims 20-25, 68 and 72 have been withdrawn from consideration. No claims have been allowed. The official action of January 3, 2008, has now been carefully studied. Reconsideration and allowance are hereby respectfully urged.

Briefly, the present invention relates to the use of NIK and related molecules for binding to cγc and inhibiting cγc/NIK interaction, thus modulating signal activities controlled by cytokines and NIK induced NF-κB activation.

It is noted that, while claims 20, 23 and 24 had previously been examined in this case, these claims have now been withdrawn from further consideration as being drawn to non-elected inventions, there being no allowable generic or linking claim. However, claims 20, 23 and 24 are generic claims and encompass the elected embodiments. Accordingly, they must be examined because, if the elected embodiment is found to be allowable, then these linking claims must be examined as well as all of the claims linked thereto. Accordingly, reconsideration of the withdrawal from consideration of claims 20, 23 and 24 is respectfully urged. The remaining non-elected claims remain in the case pending the possibility of allowance of a generic or linking claim.

The examiner has objected to the specification because the Tables are not numbered in sequence. The examiner states that identification of the Tables should use a consistent format and be in the sequence mention in the text of the specification.

Applicant is aware of no requirement of any regulation or statute that would prevent an applicant from labeling his tables as he chooses. If an applicant chooses to label one type of table as Tables A-C and another type of table as Tables 1-5, then what is the harm? The specification is consistent in identifying the table being referred to and each table has a distinct identification. It should not be any of the examiner's business to decide whether or not the table must be in a "consistent format." Nevertheless, in order to obviate this issue, the specification has now been amended in order to renumber the tables in a consistent format, thus obviating this objection.

The examiner maintains the objection to the page on which the beginning of the claims appear for not including the term "We claim" or "The claims are."

This is another matter with which the examiner should not be concerned, for the reasons explained in applicants' last response. Nevertheless, the specification

has now been amended in order to insert these words on the first page of the claims, thus obviating this objection.

Claims 66, 67, 69, 70 and 73-76 have been objected to for reciting non-elected subject matter. This objection is respectfully traversed.

The examiner has indicated that the full scope of the claims will be examined if a linking or generic claim is found to be allowable. Accordingly, it is permissible to leave non-elected subject matter in the claims pending completion of examination of linking and generic claims. Reconsideration and withdrawal of this objection are therefore respectfully urged.

Claims 66, 67, 69, 70 and 73-76 have been rejected under 35 U.S.C. 112, for lack of enablement. The examiner states that the claims fail to recite structural limitations in the use of the terms "mutein, variant, fusion protein, functional derivative, circularly permutated derivative, or fragment." The examiner acknowledges that methods for making variants of SEQ ID NO:18 and methods of testing peptides for the desired ability to bind to cγc and inhibit cγc/NIK interaction *in vitro* are known, but, without sufficient guidance, the skilled artisan is reduced to making and testing the unlimited number of structural variants encompassed by "any mutein, variant, fusion

protein, functional derivative, circularly permutated derivative, or fragment of SEQ ID NO:18." The examiner considers this to entail undue experimentation. Furthermore, the examiner acknowledges that the skilled artisan would expect that a variant of SEQ ID NO:18 that binds to cγc and inhibits cγc/NIK interaction would indeed treat some diseases that involve signaling of a cytokine via cγc, i.e., those affected by a cγc/NIK interaction. However, the examiner states that applicants have merely asserted that any disease that is mediated by a cγc/NIK interaction can be treated by blocking the interaction and left to the public the job of determining the identity of such diseases. This rejection is respectfully traversed.

The claims have now been amended to insert additional structural detail. In all of the independent claims, the term "variant" has now been amended to specify that the variant maintains at least 90% sequence identity with (a) and maintains the ability thereof to bind to cγc and inhibit cγc/NIK interaction. This language is supported, for example, at page 30, lines 15-19, of the specification. Accordingly, the variants are now supported by substantial sequence identity and it would not take undue experimentation to determine which variants that maintain

90% identity maintain the functional characteristics required by the claims.

Similarly, the term "functional derivative" has now been amended to insert the language from the specification that it must be pharmaceutically acceptable and that it is prepared from the functional groups present on the lateral chains of the amino acid moieties or on the terminal N- or C- groups in the polypeptide of (a) and it must maintain the ability of (a) to bind to cγc and inhibit cγc/NIK interaction. This language finds support, for example, at page 24, limes 6-13. This language clarifies that functional derivatives do not involve structural changes in the amino acid sequence, but only derivatization, such as to improve physical properties like solubility.

The circularly permutated derivative is fully defined in the present specification in the paragraph beginning at page 24, line 29. It can be seen that circular permutation has the effect of essentially preserving the sequence and identity of the amino acids of a protein while generating new termini at different locations. As this does not change the identity of the amino acids or their sequence, such permutation thus does not involve such changes as would require undue experimentation to prepare and test.

The term "fragment" is defined as being one which maintains the ability of the full polypeptide to bind to cγc and inhibit cγc/NIK interaction. This does not involve changing the sequence other than to remove amino acids from either end and simply test to see if it retains the binding properties and, if so, whether it retains the inhibition properties. Binding may be tested by high throughput screens and those that are positive can also be tested for cγc/NIK interaction by high throughput means. It would not take undue experimentation to determine how many amino acids must be removed before one would lose this function.

With respect to the diseases that can be treated, the present invention does not contend that any novel discoveries have been made in this regard. The relationship between cγc/NIK interaction and human pathologies has been studied in depth and is discussed in the background section of the present specification. With respect to claim 66, the present specification specifies exactly which cytokines have the common gamma chain in its receptor. Those of ordinary skill in the art are already well aware of which diseases involve the activation of such a cytokine in their pathogenesis. Thus, it would not take undue experimentation to determine such diseases as this was

already known at the time. The same is true for the diseases being treated in claims 69, 70, 73 and 76.

Accordingly, particularly in view of the amendment to the claims, it is believed that the present scope of the claims is supported by an enabling disclosure for the reasons discussed above. Reconsideration and withdrawal of this rejection are respectfully urged.

Claims 66, 67, 69, 70 and 73-76 have been rejected under 35 U.S.C. 112, first paragraph, on the grounds of insufficient written description. The examiner states that the recitation "any mutein, variant, fusion protein, functional derivative, circularly permutated derivative, or fragment of SEQ ID NO:18" fails to recite any functional limitations. This rejection is respectfully traversed.

As discussed hereinabove with respect to the enablement rejection, the claims have now been amended so as to define the variants. functional derivatives. circularly permutated derivatives. and fragments that can be used in the present invention in a manner that requires substantial structural identity to the main compound. Accordingly, in view of these amendments to the claims, the present rejection is no longer applicable. Reconsideration and withdrawal thereof are therefore respectfully urged.

It is submitted that all of the claims now present in the case clearly define over the references of record and fully comply with 35 U.S.C. 112. Reconsideration and allowance are therefore earnestly solicited.

Respectfully submitted,

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